IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

454 LIFE SCIENCES CORPORATION, Plaintiff, v. ION TORRENT, INC., LIFE TECHNOLOGIES CORP. AND THERMO FISHER SCIENTIFIC, INC., Defendants.	)	C.A. No. _____ **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

1. Plaintiff 454 Life Sciences Corporation, by its attorneys, for its Complaint in this action alleges against Defendants Ion Torrent, Inc., Life Technologies Corporation and Thermo Fisher Scientific, Inc. (collectively, "Defendants") as follows:

PARTIES AND JURISDICTION

2. 454 Life Sciences Corporation ("454"), is a corporation organized and existing under the laws of the State of Delaware, having its principal place of business at 15 Commercial Street, Branford, Connecticut 06405.

3. Ion Torrent, Inc. ("Ion Torrent") is a corporation organized and existing under the laws of the State of Delaware, having its principal place of business at 180 Oyster Point Blvd, South San Francisco, California 94080. Ion Torrent is a wholly owned subsidiary of Life Technologies Corporation ("Life Technologies").

4. Life Technologies is a corporation organized and existing under the laws of the State of Delaware, having its principal place of business at 5791 Van Allen Way, Carlsbad, California 92008. Life Technologies is a wholly owned subsidiary of Thermo Fisher Scientific Inc. ("Thermo Fisher").

5. Thermo Fisher is a corporation organized and existing under the laws of the State of Delaware, having its principal place of business at 81 Wyman Street, Waltham, Massachusetts 02451.

6. This action arises under the Patent Act of 1952, as amended, 35 U.S.C. §§ 1 et seq.

7. This Court has jurisdiction to hear this action under 28 U.S.C. §§ 1331, 1338(a), and 1367.

THE PATENTS-IN-SUIT

8. 454 is the owner by assignment of U.S. Patent No. 7,323,305 (the "'305 Patent"), entitled, "Methods of Amplifying and Sequencing Nucleic Acids," which was duly and legally issued by the United States Patent and Trademark Office on January 29, 2008. The '305 Patent issued from United States Patent Application Serial No. 10/767,779, filed on January 28, 2004. A true and correct copy of the '305 Patent is attached hereto as Exhibit A.

9. 454 is the owner by assignment of U.S. Patent No. 8,748,102 (the "'102 Patent"), entitled, "Bead Emulsion Nucleic Acid Amplification," which was duly and legally issued by the United States Patent and Trademark Office on June 10, 2014. The '102 Patent issued from United States Patent Application Serial No. 10/767,899, filed on January 28, 2004, through a series of continuation applications. A true and correct copy of the '102 Patent is attached hereto as Exhibit B.

10. 454 is the owner of by assignment of U.S. Patent No. 8,765,380 (the "'380 Patent"), entitled, "Bead Emulsion Nucleic Acid Amplification," which was duly and legally issued by the United States Patent and Trademark Office on July 1, 2014. The '380 Patent issued from United States Patent Application Serial No. 10/767,899, filed on January 28, 2004,

through a series of continuation applications. A true and correct copy of the '380 Patent is attached hereto as Exhibit C.

FIRST CLAIM FOR RELIEF
INFRINGEMENT OF THE '305 PATENT

11. The allegations in the foregoing paragraphs of this Complaint are incorporated by reference herein as if restated and set forth in full.

12. The '305 Patent discloses and claims embodiments of a process called "emulsion PCR" for simultaneously amplifying multiple nucleic acids, such as DNA, in a single reaction tube. Emulsion PCR was a major advance in the field of DNA sequencing and enabled scientists to determine the sequences of DNA molecules much more rapidly and cheaply than was possible using prior DNA sequencing techniques.

13. Defendants make, offer for sale and sell in the United States machines and chip kits for performing emulsion PCR and sequencing the products of emulsion PCR, including machines (such as the Ion OneTouch™ 2 System comprising the One Touch™ 2 Instrument and the One Touch™ ES, the Ion Chef™ System, the Ion Personal Genome Machine (PGM)™ System and the Ion Proton™ System), as well as chip kits (such as those sold under the designations Ion 314™ Chip Kit v2, Ion 314™ Chip Kit v2 BC, Ion 316™ Chip Kit, Ion 316™ Chip Kit v2, Ion 316™ Chip Kit v2 BC, Ion 318™ Chip Kit, Ion 318™ Chip Kit v2, Ion 318™ Chip Kit v2 BC, Ion PI™ Chip Kit v2, Ion PI™ Chip Kit v2 BC, and Ion PI™ Chip Kit v3) that are designed to be used with the foregoing machines in sequencing the products of emulsion PCR.

14. Defendants also make, offer for sale and sell in the United States consumables for use with the foregoing machines and chips in performing emulsion PCR and sequencing the products of emulsion PCR, including library kits (such as the Ion TrueMate™ Plus Library Kit,

Ion Xpress™ Plus Fragment Library Kit, Thermo Scientific® MuSeek™ Library Preparation Kit, Ion Plus Fragment Library Kit, NEBNext Fast DNA Fragmentation & Library Prep Set, Ion Plus Fragment Library Kit for AB Library Builder™ System, Ion Xpress™ Fragment Library Kit for AB Library Builder™ System, Ion Total RNA-Seq v2 and Ion Total RNA-Seq Kit for AB® Library Builder™ System), amplification reagent kits (such as the Ion PGM™ Template OT2 400 Kit, Ion PGM™ Template OT2 200 Kit, Ion PI™ Template OT2 200 Kit v3, Ion PI™ Hi-Q™ OT2 200 Kit, Ion PI™ Template OT2 200 Kit v2, Ion PGM™ Hi-Q™ OT2 Kit, Ion PGM™ IC 200 Kit, Ion PGM™ IC 200 Starter Kit, Ion PI™ IC 200 Kit, Ion PGM™ Hi-Q™ Chef Kit and Ion PI Hi-Q Chef Kit), controls kits (such as the Ion Control Materials 200 Kit), sequencing reagent kits (such as the Ion PGM™ Hi-Q™ Sequencing Kit, Ion PGM™ Hi-Q™ Chef Sequencing Kit, Ion PGM™ Hi-Q™ Chef 400 Supplies Kit, Ion PGM™ Sequencing 200 Kit v2, Ion PGM™ Sequencing 400 Kit, Ion PI™ Sequencing 200 Kit v3, Ion PI™ Hi-Q™ Sequencing 200 Kit, Ion PI™ Hi-Q™ OT2 200 Kit), barcode adaptor kits (such as the Ion Xpress™ Barcode Adapters 1–16 Kit, Ion Xpress™ Barcode Adapters 17-32 Kit, Ion Xpress™ Barcode Adapters 1-96 Kit, Ion Xpress™ Barcode Adapters 33-48 Kit, Ion Xpress™ Barcode Adapters 49-64 Kit, Ion Xpress™ Barcode Adapters 65-80 Kit and Ion Xpress™ Barcode Adapters 81-96 Kit), library quality control kits (such as the Ion Universal Library Quantitation Kit and Ion Library Equalizer™ Kit), as well as data analysis technology (such as the Torrent Suite™ Software, Ion Reporter™ Software and Ion Reporter™ Server).

15. Use of the aforesaid machines, chips, consumables and data analysis technology and other products for performing emulsion PCR or sequencing the products of emulsion PCR (collectively, the “Accused Products”) by customers and end users in accordance with the

accompanying directions, and use of the Accused Products by Defendants in the course of testing, quality control, and customer support and training, directly infringes the '305 Patent.

16. Defendants have been aware of the '305 Patent and that use of the Accused Products in accordance with their accompanying directions infringes the '305 Patent. For example, Jonathan M. Rothberg ("Rothberg"), an inventor of the '305 Patent, after assigning to 454 his invention and the applications that ultimately issued as the '305 patent, founded Ion Torrent to commercialize the technology he had assigned to 454 and served as CEO of Ion Torrent both before and after Ion Torrent was acquired by Life Technologies, which in turn was acquired by Thermo Fisher. Rothberg's knowledge concerning the foregoing facts is imputed to the Defendants. Moreover, in the course of licensing discussions that commenced at least as early as 2012, 454 and its affiliates drew Defendants' attention to the '305 Patent and their infringement thereof.

17. The Accused Products have no substantial use other than for performing emulsion PCR and sequencing the products of emulsion PCR. Defendants specifically intended customers and end users to infringe the '305 Patent, as shown by their providing machines, kits, consumables and other products with no other substantial noninfringing use.

18. Defendants' sale and offer for sale of the Accused Products with the accompanying directions induces infringement of the '305 Patent by customers and other end users.

19. Defendants' sale and offer for sale of the Accused Products contributes to infringement of the '305 Patent.

20. Defendants' direct and indirect infringement of the '305 Patent have caused damage to Plaintiff. Unless enjoined from continuing their infringement of the '305 Patent, Defendants will continue to harm Plaintiff's interests, causing Plaintiff irreparable injury.

21. Defendants' infringement of the '305 Patent has been and continues to be willful and deliberate, entitling Plaintiff to increased damages under 35 U.S.C. § 284 and reasonable attorneys' fees under 35 U.S.C. § 285.

SECOND CLAIM FOR RELIEF
INFRINGEMENT OF THE '102 PATENT

22. The allegations in the foregoing paragraphs of this Complaint are incorporated by reference herein as if restated and set forth in full.

23. The '102 Patent discloses and claims embodiments of emulsion PCR.

24. Use of the aforesaid Accused Products by customers and end users in accordance with the accompanying directions, and use of the Accused Products by Defendants in the course of testing, quality control, and customer support and training, directly infringes the '102 Patent.

25. Defendants have been aware of the '102 Patent and that use of the Accused Products in accordance with their accompanying directions infringes '102 Patent. For example, Rothberg, an inventor of the '102 Patent, after assigning to 454 his invention and the applications that ultimately issued as the '102 Patent, founded Ion Torrent to commercialize the technology he had assigned to 454 and served as CEO of Ion Torrent both before and after Ion Torrent was acquired by Life Technologies, which in turn was acquired by Thermo Fisher. Rothberg's knowledge concerning the foregoing facts is imputed to the Defendants. Moreover, in the course of licensing discussions that commenced at least as early as 2012, 454 and its affiliates drew Defendants' attention to United States Patent Application Serial No. 10/767,899 which ultimately issued as the '102 Patent and their infringement thereof.

26. The Accused Products have no substantial use other than for performing emulsion PCR and sequencing the products of emulsion PCR. Defendants specifically intended customers and end users to infringe the '102 Patent, as shown by their providing machines, kits, consumables and other products with no other substantial noninfringing use.

27. Defendant's sale and offer for sale of the Accused Products with the accompanying directions induces infringement of the '102 Patent by customers and other end users.

28. Defendants' sale and offer for sale of the Accused Products contributes to infringement of the '102 Patent.

29. Defendants' direct and indirect infringement of the '102 Patent have caused damage to Plaintiff. Unless enjoined from continuing their infringement of the '102 Patent, Defendants will continue to harm Plaintiff's interests, causing Plaintiff irreparable injury.

30. Defendants' infringement of the '102 Patent has been and continues to be willful and deliberate, entitling Plaintiff to increased damages under 35 U.S.C. § 284 and reasonable attorneys' fees under 35 U.S.C. § 285.

THIRD CLAIM FOR RELIEF
INFRINGEMENT OF THE '380 PATENT

31. The allegations in the foregoing paragraphs of this Complaint are incorporated by reference herein as if restated and set forth in full.

32. The '380 Patent discloses and claims embodiments of emulsion PCR.

33. Use of the aforesaid Accused Products by customers and end users in accordance with the accompanying directions, and use of the Accused Products by Defendants in the course of testing, quality control, and customer support and training, directly infringes the '380 Patent.

34. Defendants have been aware of the ‘380 Patent and that use of the Accused Products in accordance with their accompanying directions infringes ‘380 Patent. For example, Rothberg, an inventor of the ‘380 Patent, after assigning to 454 his invention and the applications that ultimately issued as the ‘380 Patent, founded Ion Torrent to commercialize the technology he had assigned to 454 and served as CEO of Ion Torrent both before and after Ion Torrent was acquired by Life Technologies, which in turn was acquired by Thermo Fisher. Rothberg’s knowledge concerning the foregoing facts is imputed to the Defendants. Moreover, in the course of licensing discussions that commenced at least as early as 2012, 454 and its affiliates drew Defendants’ attention to United States Patent Application Serial No. 10/767,899 which ultimately issued as the ‘380 Patent and their infringement thereof.

35. The Accused Products have no substantial use other than for performing emulsion PCR and sequencing the products of emulsion PCR. Defendants specifically intended customers and end users to infringe the ‘380 Patent, as shown by their providing machines, kits, consumables and other products with no other substantial noninfringing use.

36. Defendant’s sale and offer for sale of the Accused Products with the accompanying directions induces infringement of the ‘380 Patent by customers and other end users.

37. Defendants’ sale and offer for sale of the Accused Products contributes to infringement of the ‘380 Patent.

38. Defendants’ direct and indirect infringement of ‘380 Patent have caused damage to Plaintiff. Unless enjoined from continuing their infringement of the ‘380 Patent, Defendants will continue to harm Plaintiff’s interests, causing Plaintiff irreparable injury.

39. Defendants' infringement of the '380 Patent has been and continues to be willful and deliberate, entitling Plaintiff to increased damages under 35 U.S.C. § 284 and reasonable attorneys' fees under 35 U.S.C. § 285.

FOURTH CLAIM FOR RELIEF
BREACH OF CONTRACT

40. The allegations in the foregoing paragraphs of this Complaint are incorporated by reference herein as if restated and set forth in full.

41. On or about May 14, 2004, Rothberg and 454 Life Sciences entered into two agreements (the "May 2004 Agreements") under which Rothberg assigned to 454 (which was then known as 454 Life Sciences Corporation), his entire right, title, or interest in or to United States Patent Application Serial No. 10/767,779 entitled METHODS OF AMPLIFYING AND SEQUENCING NUCLEIC ACIDS and United States Patent Application Serial No. 10/767,899 entitled BEAD EMULSION NUCLEIC ACID AMPLIFICATION, all continuations and divisions of the foregoing applications, and the subject matter disclosed therein (the "Emulsion PCR Technology").

42. Under applicable Connecticut law, the May 2004 Agreements included an implied covenant by Rothberg that he would not do anything to injure or impair the right of 454 to receive the benefit of the May 2004 Agreements.

43. Under federal law, Rothberg is estopped from challenging the validity of the claims in the patents that issued from the applications he assigned to 454.

44. Subsequent to May 2004, Rothberg caused and actively induced the Defendants to make and sell products that practiced the Emulsion PCR Technology.

45. Defendants are successors in title to, and in privity with, Rothberg, and as such are subject to the implied covenant of good faith contained in the May 2004 Agreements and the estoppel that arises from the assignments made by Rothberg in the May 2004 Agreements.

46. By making unauthorized use of Emulsion PCR Technology, Defendants are acting to impair the right of 454 to receive the benefit of the May 2004 Agreements.

47. Defendants are liable to 454 for breach of the implied covenant of good faith contained in the May 2004 Agreements.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays that the Court:

(a) declare, adjudge and decree that use of the Accused Products by Defendants, their customers and end users directly infringes the Patents-in-Suit and that Defendants' distribution, offer for sale and sale of the Accused Products with their accompanying instructions induces and contributes to infringement of the Patents-in-Suit;

(b) declare, adjudge and decree that Defendants are liable to 454 for breach of the implied covenant of good faith contained in the May 2004 Agreements;

(c) award compensatory damages as provided by law, including damages adequate to compensate for infringement arising from Defendants' use, sale and offer for sale of the Accused Products;

(d) issue a permanent injunction pursuant to 35 U.S.C. § 283 and 28 U.S.C. § 1331 restraining and enjoining Defendants and their affiliates, subsidiaries, directors, officers, employees, attorneys, agents, and all persons acting in privity or concert with them, from further acts that infringe, induce infringement, or contribute to infringement of the Patents-in-Suit;

(e) declare, adjudge and decree that this case is exceptional and award Plaintiff its reasonable attorneys' fees and costs pursuant to 35 U.S.C. § 285;

(f) declare, adjudge and decree that Defendants' infringement has been willful and that the damages will be increased under 35 U.S.C. § 284 up to three times the amount found or measured;

(g) declare, adjudge and decree that Defendants are estopped and enjoined from challenging the validity or enforceability of the Patents-in-Suit, or any claim thereof in this action or in any other judicial or administrative forum; and

(h) award such other and further relief as this Court may deem just and proper.

JURY TRIAL DEMANDED

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff demands a trial by jury of all issues triable of right by jury.

Respectfully submitted,

POTTER ANDERSON & CORROON LLP

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